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AN ADDRESS
ON
SOME OF THE RELATIONS OF PREGNANCY TO SURGERY.

Delivered at the first meeting of the Mirfield and District Medico-Chirurgical Society.

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THE four relations of pregnancy to surgery which are of paramount importance are:

(A) The question of general surgical operation during the course of pregnancy.

(B) That of pregnancy simulating other abdominal tumours.

(C) The subject of ectopic gestation; and

(D) A consideration of the methods of delivery otherwise than *per vias naturales*.

Owing to the extent of the two subjects last mentioned I propose to limit my remarks to the two relations just mentioned, only to touch on the third, and to leave over the fourth subject.

(A) OPERATIONS PERFORMED DURING THE COURSE OF PREGNANCY.

To the best of my belief the following eleven cases are the only operations which I have performed during pregnancy, either in hospital or in private practice.

I. *Myoma of Cervix Uteri removed in the Seventh Month of Pregnancy.*—The patient, aged 30, was sent to me by Dr. Gordon Black, of Harrogate, in 1886. The vagina was occupied by a myoma the size of a cocoanut growing on the anterior lip of the cervix. The os was with difficulty felt as a slit high up on the posterior aspect of the tumour. The growth was quite distinct from the urethra, but the vaginal mucous membrane began to be reflected over at just behind the entrance of the urethra into the bladder. There was a constant offensive and bloody vaginal discharge. After asepticising the vagina the tumour was enucleated on February 25th. The patient recovered without pain, fever, or other untoward symptom, and when examined on March 6th the cervix appeared to be normal in position and size. Dr. Black sent me word to say that the confinement came off quite naturally on May 6th, quite at the full time.

II. *Cancer of Breast: Amputation in Third Month of Pregnancy.*—Mrs. S. was operated on in 1887 in the infirmary for a rapidly growing cancer of the breast involving the axillary glands, a complete and radical operation being done. Recovery occurred without fever or complication, and the

patient went to the full period of her pregnancy. When heard of a year afterwards there had been no return of the disease.

III. *Ovariotomy in Tenth Week of Pregnancy, and Removal of Adherent Proliferating Tumour from Back of Uterus.*—Mrs. S., aged 37, was sent to me by Dr. Ambrose Atkinson with a rapidly-growing abdominal tumour, which from the presence of nodules felt through the abdominal wall and from the tumour moving with the uterus we feared might be malignant. Although pregnancy was diagnosed operation was decided on. After emptying the cyst the adhesions within the pelvis were separated from the uterus and large and small intestine, a quantity of soft growth being scooped out of Douglas's pouch. Drainage by means of a glass tube was employed for forty-eight hours. Recovery was uninterrupted, and the patient was up in three weeks, and went home within the month. The tumour proved to be a proliferating ovarian cyst with much solid growth, which having perforated the cyst wall had invaded the peritoneum and adjoining viscera. Dr. Atkinson sent me word to say that he had subsequently attended the patient in labour, from which she had made a good recovery.

IV. *Strangulated Femoral Hernia: Kelotomy in Third Month of Pregnancy.*—Dr. Purdy, of Woodlesford, sent for me on June 23rd, 1888, to see a case of strangulated hernia in which the vomiting of pregnancy had gradually passed on into stercoraceous vomiting. Operation was followed by an uninterrupted recovery, and although the stercoraceous vomiting ceased the pregnancy sickness continued. Dr. Purdy wrote later to tell me that the patient was delivered at the full term.

V. *Rotation of Ovarian Tumour at Second Month of Pregnancy: Peritonitis: Ovariotomy.*—Mrs. A., aged 25, a patient of my brother, with whom and with Mr. Teale I saw her, in July, 1888, was seized with acute abdominal symptoms two months after marriage. A tumour was perceptible at the lower part of the abdomen, and as it increased rapidly and the symptoms were intensifying the abdomen was opened on July 17th, and I removed a dark multilocular cyst containing 9 pints of fluid; the pedicle was twisted from left to right. The abdomen contained a pint of dark coffee-ground-looking material. Recovery was uninterrupted, and in February, 1889, I heard from my brother that he had attended the patient, the labour having been normal.

VI. *Piles removed at Fourth Month of Pregnancy.*—Mrs. McA., suffering intensely from inflamed piles, consulted me in 1893 at the suggestion of her medical man, Dr. Young. She was four months advanced in her first pregnancy, but her sufferings were so severe, partly owing to piles and partly to fissure, that we decided to operate. The sphincter was fully dilated, and the piles were removed by the cautery. The pain ceased, health was regained, and the patient went to the full term.

VII. *Amputation of Breast and Glands at Seventh Month of Pregnancy.*—Mrs. J. W. was admitted to the infirmary in July, 1895, under my care with very extensive cancer of the breast and axillary glands, and as ulceration had already begun it was manifest that to wait three months would render the case too late for operation. The operation was so extensive that plastic procedures had to be adopted to cover in the wound. Union by first intention occurred, and the patient returned home in the third week to await her confinement.

VIII.—*Compound Comminuted Fracture of Leg at Eighth Month of Pregnancy.*—This case is worth mentioning, as not only was an accident borne, but the subsequent asepticising and setting of the limb were effected without bringing on labour before the ordinary time.

IX. *Cholecystotomy at Sixth Month of Pregnancy.*—Mrs. A., aged 30, was sent to me in October, 1895, by Dr. James, of Woodlesford, with symptoms of gall stones, and with an abdominal tumour which we diagnosed as pregnancy. Although the cholelithiasis was producing great distress, we advised the patient to wait till after her accouchement before being operated on, and in the meantime to adopt medical treatment. Early in December, however, her distress was so extreme that operation was decided on, and she was admitted to the infirmary, where I performed cholecystotomy, removing nine gall stones of moderate size from the gall bladder and cystic duct. Her progress was most satisfactory as far as the operation was concerned; the wound healed by first intention, and all went well. On the eighth day after operation a very noisy patient was admitted to the ward, and all the other patients were not only alarmed but were kept awake the greater part of one night. Apparently in consequence of this disturbance premature confinement followed, the child surviving a few hours. The mother made a good recovery.

X. *Hæmorrhoid and Fissure Treated by Stretching the Sphincter at Second Month of Pregnancy.*—This case occurred in the infirmary on December, 1895, and calls for no special comment. The patient did not miscarry, and recovered satisfactorily.

XI. *Ovariotomy in Third Month of Pregnancy.*—Mrs. M., sent to me by Mr. Murphy on account of an abdominal tumour which had increased

very rapidly, and had pushed up the pregnant uterus so as to force it above the pubes. The operation was performed in the second week of January of this year, a dermoid ovarian cyst, containing about two pints of fluid, being removed. Recovery has been uninterrupted, and the patient is now well.

The foregoing cases present certain points of interest in themselves, but it is beyond the scope of this paper that I should dwell on them. The important fact I would point out is that, although a number of the operations were of a serious nature, in no case except one did premature labour come on, and in that one case it followed so distinctly on an emotional trouble after the wound was healed, that I think it might be fair to say that in no case did the uterus empty itself as a result of operation.

Although the old canons of surgery hold good in so far as they would lead us to avoid operating during the course of pregnancy, yet an experience of the kind I have related shows that our grounds for observing unwritten law are quite altered; for now we can not only do away with shock by the use of anæsthesia, but by the observance of antiseptic precautions, wound complications in the shape of pain, fever, and suppuration are avoided.

The change is well illustrated by what was told me by an able surgeon very much my senior, who, speaking of bygone days, said he had performed ovariotomy four times during pregnancy; all the patients had miscarried, and one had died. Then it was apparently a matter of chance whether or not the patient would miscarry after operation, the chances being in favour of miscarriage. Now, it would seem to me the question of chance is eliminated in a great measure, and that should an operation be decidedly to the advantage of the patient, it may be undertaken with every probability of success.

(B) Pregnancy simulating other Abdominal Tumours.

It would be tedious to relate all the cases I have seen of pregnancy mistaken for ovarian tumour or for myoma of the uterus; for instance, in one week I had three cases sent to me as ovarian tumour, all of which proved to be instances of pregnancy. Sometimes the mistake arises from a too implicit trust in human nature: for instance, it is hard to believe that a spinster lady of position, aged 49, who has missed her periods, and who has developed an abdominal swelling, should be suffering from pregnancy, but a case of this kind came to my notice only last year. The patient herself was evidently deluded, but the fœtal heart tick speedily settled the diagnosis, and her medical man asked me to allow him to explain matters to his patient at home, which I was only too glad to do.

In another case of this kind, a leader in a small church, aged 47, was so much above suspicion that disease was taken for granted, and a vaginal examination was thought to be such a dreadful ordeal that I had to make my diagnosis by means of the stethoscope.

In one case an appointment was made by telegram for me to see a lady at my rooms along with her medical man, the case having been diagnosed as a uterine tumour. On examination, I found the os dilating, and had to advise a return home by the next train.

Within one month two cases were admitted under my care at the infirmary as a uterine and an ovarian tumour

respectively, and diagnosed as such by their medical attendants, both men of experience and skill. Curiously, both brought forth prematurely the day after admission, the uterine tumour being a case of hydramnios, with twins, the ovarian being an ordinary case of pregnancy. The latter case was simply an oversight on the part of my medical friend, who accepted the patient's statement that pregnancy was impossible, and relied on an examination through the clothing. The former "hydramnios" was more difficult of diagnosis, and, as the twins were dead and quite small, the only certain sign to be obtained was *ballottement*; as a matter of fact, the diagnosis of hydramnios was arrived at before the uterus expelled its contents.

I have seen two other cases of hydramnios to create a difficulty in diagnosis; in one an operating surgeon asked my opinion on a case he was going to operate on within the week. The abdomen was an enormous size, but the feeling of solid through fluid made me suspicious, and I suggested the use of the exploring syringe, which drew off liquor amnii and cleared up the diagnosis of the case. In the other, an eminent surgeon whom I knew actually performed hysterectomy, and only after removal it was found that the uterus contained shrivelled twins.

From these, and many other cases that I could relate, I always feel it my first duty in making a diagnosis of abdominal tumour to eliminate pregnancy. At times, in the early stages, this may be difficult without the passage of the sound, which would, of course, bring on abortion, and which would be unjustifiable; but such cases will, as a rule, wait if necessary until the period of quickening is reached, when the fœtal heart can be heard. The bimanual examination with or without an anæsthetic in the case of pelvic tumours, and the stethoscope and other signs when the tumour has become abdominal, will usually overcome all difficulties; at all events, in a tolerably large experience these precautions have so far kept me from real difficulty, and I have not yet had the mortification of opening a pregnant abdomen unintentionally.

(c) Ectopic Pregnancy.

This subject is one of no less scientific interest than practical importance, for not only does it offer several problems difficult to explain, but from its frequent occurrence, its alarming and dangerous symptoms, and its curability if treated scientifically, its study becomes of the first interest to the general medical practitioner as well as to the operating surgeon.

It is a curious fact that in every female mammal above the monotremata there is a section of the genital canal between each abdominal ostium and the uterus, in which under normal conditions the impregnated ovum is not retained, and that, so far as is at present known, the lodgment and growth of an impregnated ovum has only occurred in this situation in woman, when the disease is known as tubal pregnancy or extrauterine fœtation, or ectopic gestation. Perhaps it is that woman only suffers from desquamative salpingitis, which Mr. Lawson Tait says is always present in such cases, though in one of my cases there was apparently no evidence of this. Tubal gestation is of interest also from the many accidents that may occur in its course. The position of the ovum in the tube and the site of the placenta predisposing to the special form which the case will take.

The following schema shows at a glance the varieties of the disease that may be met with, giving a rational explanation of the conditions. It seems convenient to divide the tube into thirds, as the outer third is completely invested by the peritoneum; the middle third is only partly invested, and has the mesosalpinx below; while the inner third is placed in the uterine wall.

In the outer two-thirds rupture of the tube usually occurs in the third to the tenth week, rarely beyond the twelfth, but in the inner third it may not occur until the fifth month. The anatomical arrangement forms the basis for the classification which is shown in the chart, and which I will try in as few words as possible to explain:

It is impossible now to enter into all these varieties of the disease in question, many of which I have seen and operated on. I have marked with an asterisk all the varieties that I believe I have seen, either under my own personal care or in the hands of colleagues; but I propose to limit my remarks simply to the dreadful accident of intraperitoneal hæmatocele, which practically always depends on the rupture of a pregnant tube.

A case of this kind once seen is never forgotten, and in no class of cases is the value of early surgical treatment brought home so forcibly, both to the patient and her friends as well as to the medical attendants themselves, as in this. I have had the privilege of saving several valuable lives after this accident, and in only one out of a number of cases has death followed on operation, and in that instance the patient had lost blood to an enormous extent and died of pulmonary thrombosis the night subsequent to operation. I will only relate 2 examples, but they will serve to illustrate my remarks.

About 11 o'clock one morning a medical friend called and asked me if I would see his wife, who had been taken suddenly ill at breakfast, and had been carried to bed in a fainting condition; she was only recently married, and had missed one period a fortnight before.

I found her only partly conscious, and pulseless, looking as pale as the sheet on which she was lying; the history of a sudden pelvic pain, followed by faintness and the presence of a fluid thrill in the lower abdomen at once rendered the diagnosis clear, and within a very short time I had the abdomen opened, and a ruptured tube still bleeding ligatured and removed. Several pints of blood and clot were washed out of the abdomen, and drainage was adopted. Recovery was speedy, and the patient is to-day in good health.

In another case my friend, Dr. Drake, asked me to see with him a young married lady, who had been suddenly seized while at the railway station with pelvic pain, followed by faintness, and on arrival at home by repeated fainting attacks. The same history of a missed period and the presence of fluid in the abdomen led to a diagnosis which an abdominal section verified. After removal of the ruptured tube, and after clearing the abdomen of blood, speedy recovery ensued, and that lady is now in good health.

The important point to bear in mind in these cases is that delay is worse than useless, it is positively dangerous; and though in a case I saw with Dr. Husband at Ripon we succeeded in saving life by operating on the second day, there may be no second day reached, and if we want to be certain of saving life we must interfere at the earliest possible moment.

Schema of Ectopic Gestation.

I.—Ovarian (not proved).

II.—Tubal.

- In outer third.
  - All the varieties which occur in the middle third of the tube, except rupture into the broad ligament.
  - Abortion through open end of tube into peritoneum or into ovarian hydrocele; ending in recovery or in death from hæmorrhage or peritonitis (hæmatosalpinx).
- In middle third.
- In inner third—that is, within wall of uterus; tubo-uterine or interstitial.
  - May rupture into peritoneum causing death by hæmorrhage eighth to twentieth week.
  - May rupture into uterine cavity and be discharged *per vaginam*.
  - Questionable if ever goes to full time in uterus, that is, after primary rupture.

- Primary rupture into peritoneum, and death from hæmorrhage before twelfth week unless surgically treated.
- Very early primary rupture; moderate hæmorrhage. Recovery not proved, but probable.
- Primary rupture into abdomen, with subsequent suppuration and peritonitis.
- Rupture into broad ligament.
- Rupture into abdomen; limitation of bleeding by matting of intestines.
- Very early apoplexy, and death of ovum without rupture (hæmatosalpinx).

- The fœtus may live and develop in broad ligament, and be removed at viable period (broad ligament gestation).
- Hæmatocele of broad ligament and death of ovum. Recovery by absorption.
- Hæmatocele suppurating and causing pelvic abscess.
- Lithopædion.
  - Permanent lithopædion, which may remain quiescent.
  - Lithopædion suppurating after remaining quiescent for years, leading to serious disturbance, and death if not removed.
- Secondary rupture of gestation sac and death from hæmorrhage or peritonitis.
- Secondary rupture and development of fœtus in intestines, even to full period (abdominal pregnancy).